

REMARKS

Claims 1-23 remain pending in this case. No claims are amended. New claims 19-23 are added. Reconsideration of the application is respectfully requested in light of the above amendments and the following remarks.

This response is responsive to the Official Action mailed May 22, 2003. In that Office Action, claims 1 and 4 through 18 were rejected under 35 U.S.C. 102 (b) as being anticipated by Huang et al (U.S. Patent No. 6,080,527, hereinafter "Huang"). Additionally, claims 1 through 18 were rejected under 35 U.S.C. 103 (a) as being obvious in view of Huang.

CLAIM REJECTIONS- 35 U.S.C. SECTION 102 (b)

With respect to Page 2 of the Office Action, the Examiner rejected Claims 1 and 4-18 under 35 U.S.C. 102 (b) as being anticipated by Huang. The Examiner cited FIGS. 2-6B and claims 1-3 of Huang as being anticipatorily teaching. Of the rejected claims, only Claims 1, 10, and 17 are independent. Applicant respectfully traverses this rejection.

Under 35 U.S.C. § 102, a reference must show or describe each and every element claimed in order to anticipate the claims. *Verdegaal Bros. v. Union Oil Co. of California* 814 F.2d 628 (Fed. Cir. 1987) ("A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.").

The Examiner is of the opinion that Huang teaches the claimed invention. Specific mention is made of FIGS. 2-6B. Huang discloses an optical proximity correction method for rectifying pattern on negative photoresist. The line pattern of integrated circuit is divided into L-shaped regions or T-shaped regions. The L-shaped or T-shaped regions are further dissected into rectangular patches (Abstract).

In Huang, the main patterns are limited to L-shaped and T-shaped regions. The L-shaped region is dissected into a first rectangular patch region and a second rectangular patch region. The first rectangular region includes the "bend of the L-shaped patch". The first rectangular region has a first shape center located in the middle, a pair of parallel first edges and a pair of parallel second edges perpendicular to the first pair. The second rectangular region has a second

shape center located in the middle, a pair of third parallel edges and a pair of parallel fourth edges perpendicular to the third pair (col. 2, line 45-55).

The T-shaped patch is dissected into a first rectangular region and a second rectangular region. The “first rectangular region includes the intersecting region of the T-shaped patch”, and the second rectangular region is attached to the middle portion on one side of the first rectangular region. The first rectangular region has a first shape center located in the middle of a pair of parallel first edges and a pair of parallel second edges perpendicular to the first pair (col. 3, lines 3-12).

With regard to claim 1, the claimed invention recites a method for correcting a first feature pattern with a first inner corner by an optical proximity correction. The method comprising dividing said first feature pattern into at least two divided feature patterns, such that said **“first inner corner is not in the middle of each of said two divided feature patterns”**. To compare the claimed invention and Huang et al, the divided feature pattern **“without inner corner in the middle of each of said two divided feature patterns”**. Nevertheless, Huang et al disclosed the **“first rectangular region includes the bend of the L-shaped patch”** after L-shaped patch is dissected into a first and a second rectangular regions. Moreover, Huang et al disclosed the T-shaped patch is dissected into a first rectangular region that including the **“intersecting region of T-shaped region”**.

Also with regards to Claims 10 or 17, the inner corner is not in the middle of each said second feature pattern and said third feature pattern after the feature pattern is divided.

Therefore, the divided feature pattern is different from the claimed invention. The divided feature pattern including the **“bend of the L-shaped”** or **“intersecting of the T-shaped”** as Huang et al disclosed. Nevertheless, the **“inner corner IS NOT in the middle of the feature patterns after the feature pattern is divided”** as claimed invention recited. Thus, Huang cannot anticipate the claimed invention.

CLAIM REJECTIONS- 35 U.S.C. SECTION 103 (a)

With respect to Page 3 of the Office Action, the Examiner rejected Claims 1 through 18 under 35 U.S.C. 103 (a) as being unpatentable over Huang in combination with one of ordinary

skill in the requisite art's ability. Of the rejected claims, only Claims 1, 10 and 17 are independent. Applicant respectfully traverses these rejections.

In order to establish *prima facie* obviousness under 35 U.S.C. 103(a), three basic criteria must be met, namely: (1) there must be some suggestion or motivation to combine the references or modify the reference teaching; (2) there must be a reasonable expectation of success; and (3) the reference or references when combined must teach or suggest each claim limitation. Applicants submit that the Office Action failed to state a *prima facie* case of obviousness, and therefore the burden has not properly shifted to Applicants to present evidence of nonobviousness.

The Examiner is of the opinion that the scope of the protection sought through Claims 1 and 4 through 18 is anticipated by Huang et al. The Examiner is of the opinion that Huang et al fails to disclose the subject matter of Claims 2 and 3 in the instant application. Furthermore, the Examiner is of the opinion that the subject matter recites the specific gap width between the divided feature patterns through a calculation formula. Further, Examiner is of the opinion that the formula used to determine the gap width is an inherent feature of the corrected mask patterns.

Nevertheless, Huang et al **DID NOT** disclose the **“inner corner is not in the middle of each divided feature patterns”** as the claimed invention recited. Furthermore, Huang disclosed the area of the rectangular region is reduced by shortening the distance from the shape center to its four edges (col. 5, lines 4-6). Nevertheless, the “distance” is not equivalent to the “spacing” between each of said divided feature patterns as the claimed invention recited. Although the Examiner is of the opinion that the recitation in the Claim 2 is a calculation formula, nevertheless, the disclosure of Huang et al **did not teach the “the area of the rectangular region is reduced by shortening the distance from the shape center to its four edges” that can obtain the spacing between the each divided feature pattern**, wherein the **“inner corner is not” in the middle of each divided feature pattern**. Thus, Huang in combination with one of ordinary skill in the requisite art's ability cannot achieve the claimed invention.

Accordingly, it is respectfully submitted that independent Claims 1, 10 and 17 are currently presented are patentable over the cited art. Regarding the rejected dependent claims, they not only include patentable features as claimed in the corresponding independent claims, but also possess added specific limitations not presented in Claims 1, 10, and 17.

NEW CLAIMS

New claims 19-23 are added herein. Support for these claims can be found in FIGS. 6 through 13 and page 12, line 18 to page 13, line 21, among other places. The new claims more particularly point out that dissection of a main feature pattern having an inner corner is performed by removing a portion of the main feature so that, after removal, the inner corner does not end up on a straight side of any of the resulting patches. If collocated with a patch at all, the inner corner must be collocated with a corner of one of the patches as shown in FIG. 6B (at the corner 62D of patch 60b), FIG. 6D (at the corners 66A, 66B and 66C of patch 64a), FIG. 7A (at the corner 72C of patch 70b), FIG. 7C (at the corner 72C of patch 70c), and FIG. 11A (at corner 112D of patch 110b).

Huang does not disclose removing a portion from a first feature pattern, the removed portion dividing the first feature pattern into a second feature pattern and a third feature pattern, the second and third feature patterns selected from a group consisting of a rectangular, trapezoidal, or pentangular feature patterns and wherein the inner corner is not on a side of the second feature pattern or third feature pattern. Huang also does not disclose removing a portion so that the inner corner is collocated with a corner of the second feature pattern.

Therefore, the Applicant respectfully requests that the Examiner find the claims allowable.

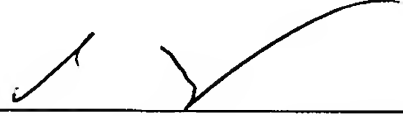
CONCLUSION

Claims 1-23 are in believed to be in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the present application. Should any issue remain that prevents immediate issuance of the application, the Examiner is encouraged to contact the undersigned attorney to discuss the unresolved issue.

Respectfully submitted,

8/7/03
Date

Customer No.: 23552


George C. Lewis, Reg. No. 53,214
Merchant & Gould P.C.
P.O. Box 2903
Minneapolis, MN 55402-0903
(303) 357-1639
(303) 357-1671 (fax)